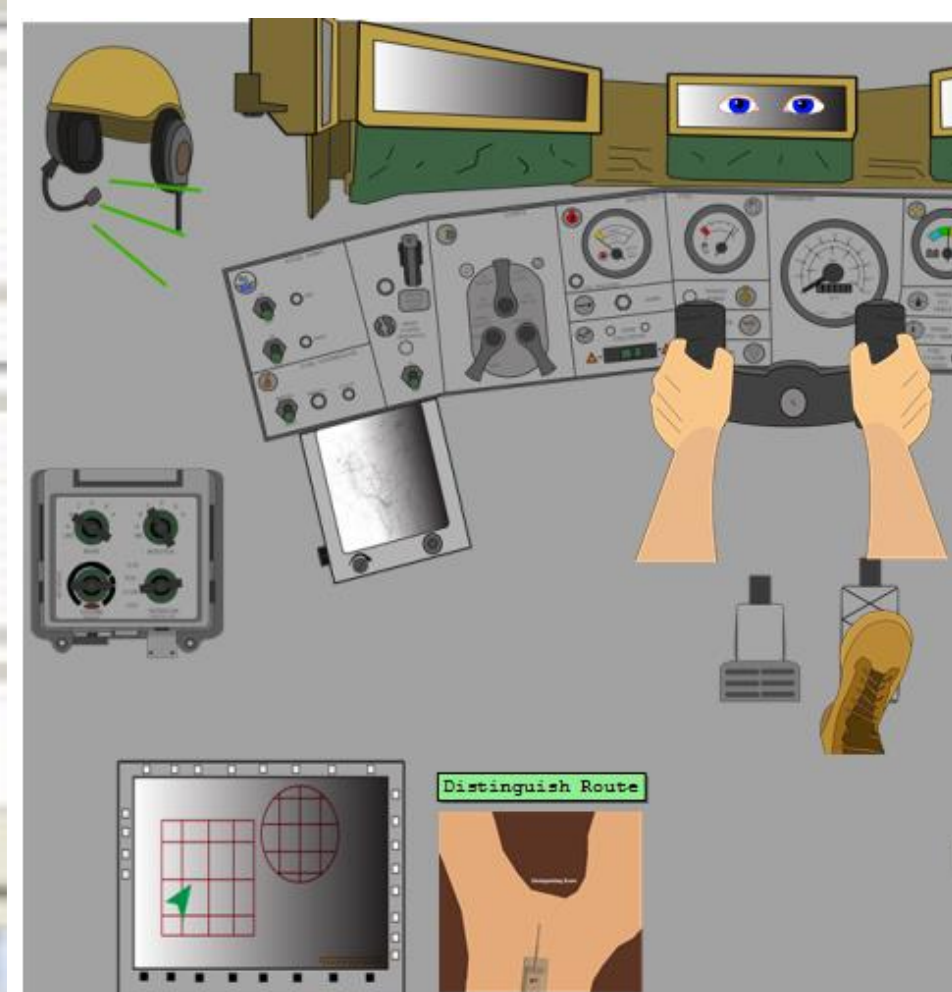
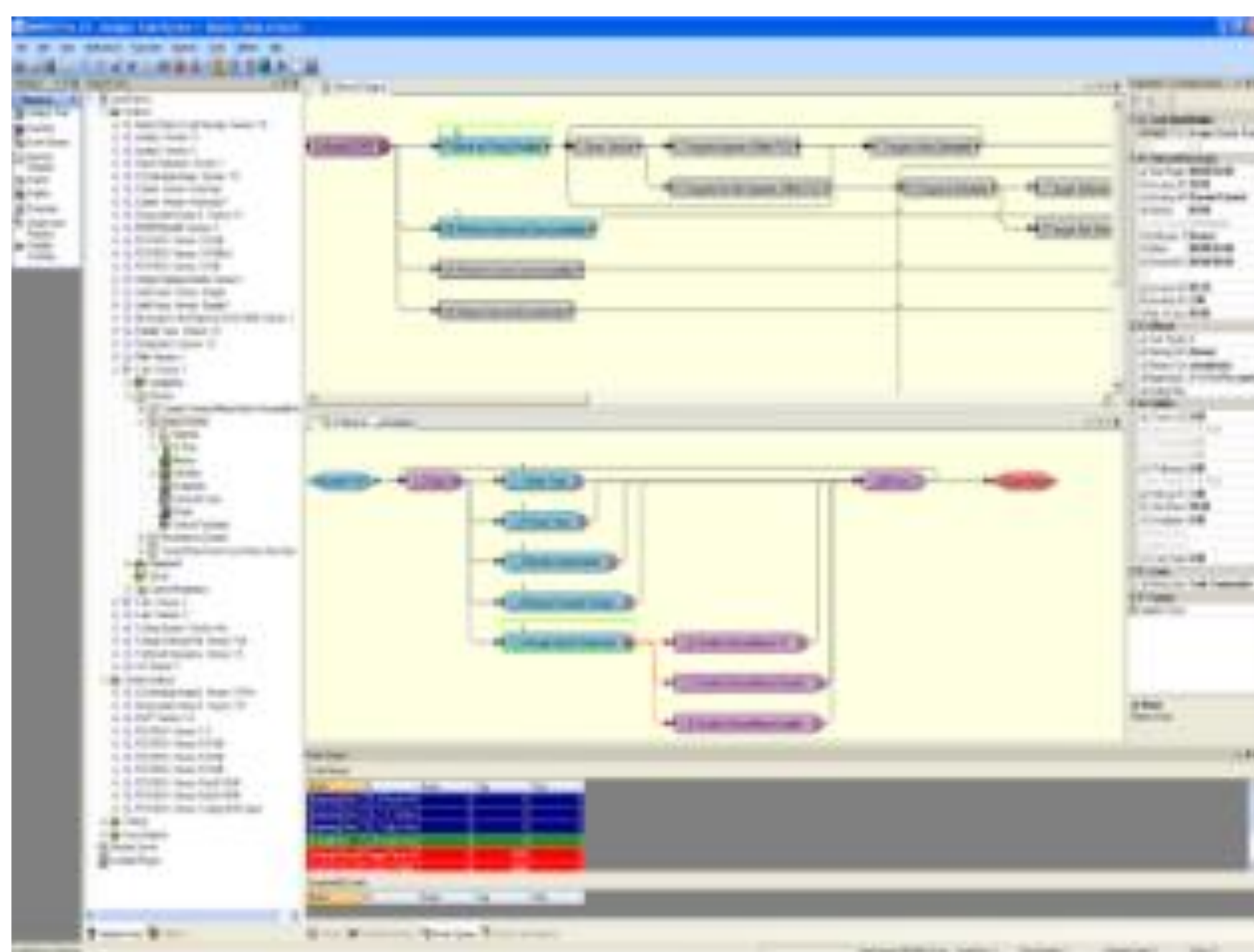


S&T Campaign: Analysis & Assessment Assessing Mission Capability of Systems Human Factors

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Research Objective

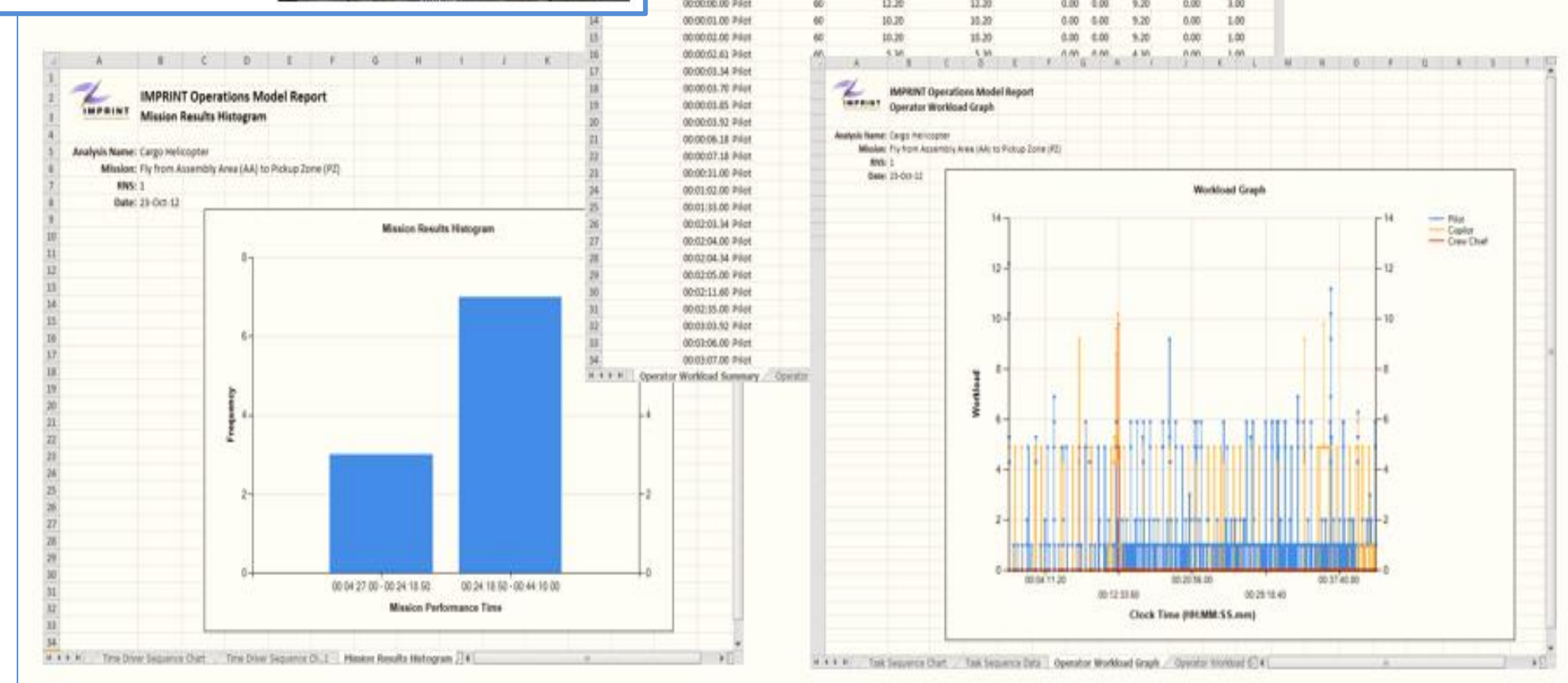
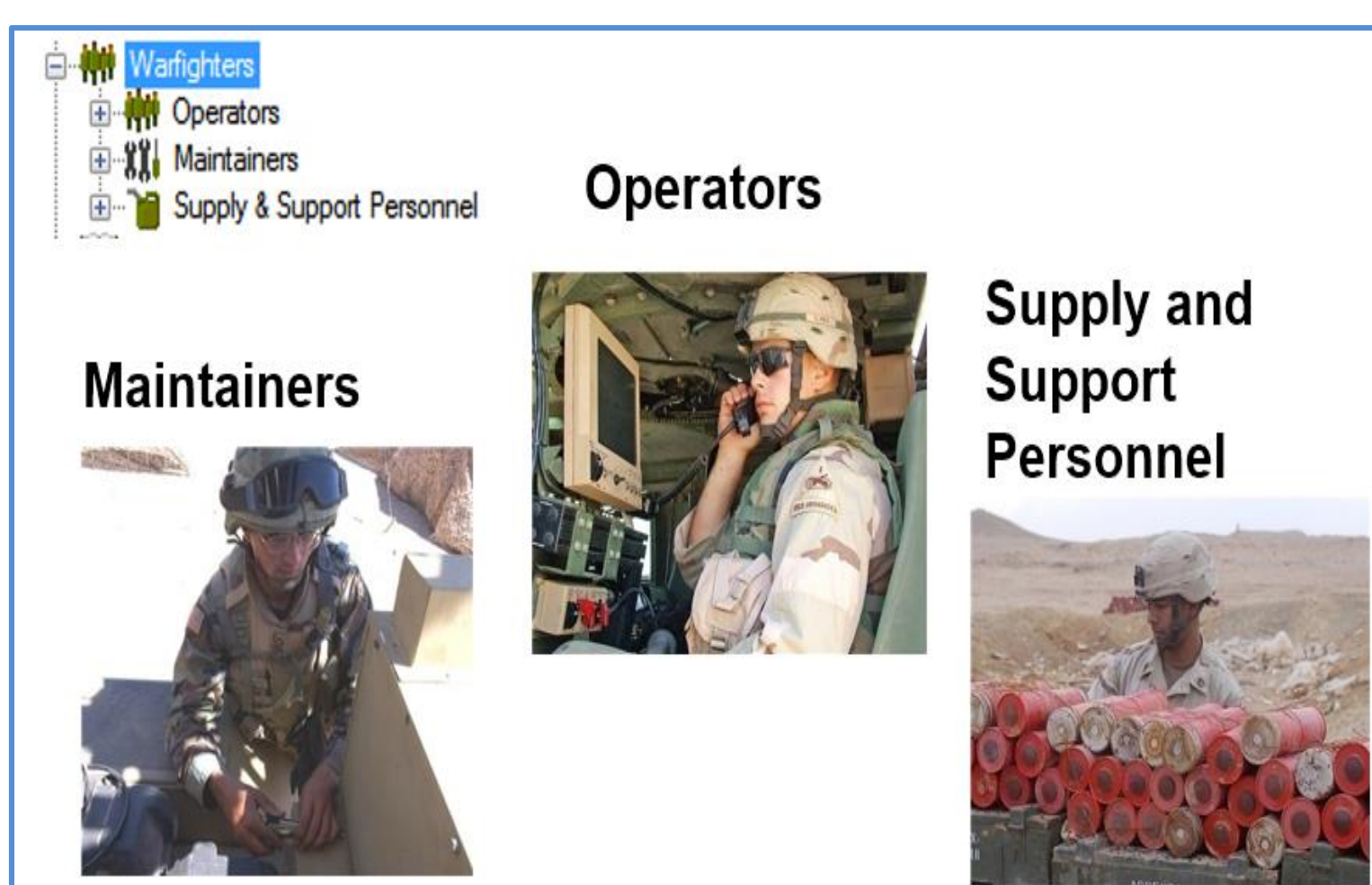
- Assess impact of system and warfighter capabilities on mission by applying Human System Integration (HSI) modeling. Develop and apply analytic techniques to produce effective models capable of predicting human, system, and mission capabilities.



Human Performance Modeling Tool (IMPRINT – Pro)

Challenges

- Need to better integrate Systems Engineering Tools with Human Performance Modeling tools early in the acquisition cycle.
- Requires an understanding of the mission profiles, warfighter tasks, and controls and displays.



Model results showing workload over time, operator performance, and mission/function/task performance

ARL Facilities and Capabilities Available to Support Collaborative Research

- System Assessment and Usability Laboratory (SAUL)
- The Improved Performance Research Integration Tool (IMPRINT - Pro) and Command, Control, Communications-Techniques for the Reliable Assessment of Concept Execution (C3TRACE) are state-of-the-art HSI software tools that:
 - Help set realistic system requirements.
 - Evaluate the capability of available manpower and personnel to effectively operate and maintain a system under environmental stressors.
 - Simulate the human components of future missions to identify Manpower Personnel Training (MPT) related capability gaps.
 - Identify areas to focus test and evaluation resources.
 - Quantify human system integration risks in mission performance terms to support milestone review.
 - Predict operational availability based on maintenance and logistics concepts.
 - Evaluate human impacts on operational performance metrics and situational awareness.

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Alternative Human Performance Modeling tools to evaluate design alternatives and impacts on system and mission performance.
- Expand HSI program efforts to identify requirements and theories for improving and linking systems engineering and HSI.
- Expand a multi-system and task approach to integrate human considerations into system of system assessments over the next 3 years (FY16 – FY18).
- Increase Transition Partners that now include PMs, G1, Army Test and Evaluation Command, U.S. Military Academy, Johns Hopkins University, U.S. Army Natick Soldier Research Development and Engineering Center, Navel Postgraduate School, DOD and Contractors.